



ENVIRONMENTAL MANAGEMENT DEPARTMENT REVIEW/COMMENT RESOLUTION

Document No. and Title: Ecology Standard Operating Procedures
Reviewer(s) Name(s): U. S. Environmental Protection Agency, August 30, 1991 comments

Comment		Page	Reviewer's Comments		Response
No	No				
	2.		SOP 5.4, Sampling of Fishes: Our original comment required that if a water displacement method is used for weighing fish, it should be described. The revised SOP allows for the use of both scales and the water displacement method but still contains no description of the latter.		2. The SOP shall be modified to contain procedures for both weighing methods. This will be implemented in the next revision to the Ecology SOPs.
	3.		SOP 5.6, Small Mammals: The revised SOP has not addressed our original comment. The sampling grid as described will cover an area of 45 meters by 45 meters not 2500 square meters as indicated in the text. Our original comment stands.		3. The SOP states that small mammal trapping grids shall be placed with 10 traps in 10 rows, with 5 meters between traps and rows. The surface area being sampled is not a precisely defined area. Small mammals have access to the grid from beyond the grid boundaries in all directions. The SOP will be changed to omit "approximately .25 hectare", thus making no estimation of sampling area.
	4.		SOP 5.7, Sampling of Birds: The text was not revised to address confusion resulting from the list of bullets. Therefore, the original comment remains.		4. Bullets 1 and 2 on page 9 shall be rewritten as follows: <ul style="list-style-type: none">* Bird plots shall be surveyed four times over a four week period with two surveys being conducted during weeks 1 and 2 and two surveys being conducted during weeks 3 and 4.* Each survey shall be divided into four observations with 2 observations being between 6 and 8 AM and 2 observations being between 8 and 10 AM. Also, use of the term "survey" shall be made consistent to refer to the 4 weekly activities identified in bullet 1.

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5.		<p>SOP 5.13, Field Sampling Plans:</p> <p>a. Pages 7 and 8: The bullet list items which the FSP should specifically identify. These include sampling locations, sampling intensity, (sample frequency and sample size), and QA/QC. These topics have not been included in the FSPs prepared thus far other than for aquatic systems. Habitat types, numbers of samples to be collected in each habitat type, and the sample locations should be provided in the FSPs in accordance with the SOP.</p> <p>b. The discussion on QA/QC is based on sample collections designed more for water and soil samples than ecology samples. The SOP should discuss QA/QC methods to verify biological data and calculations to be used to derive numerical values that will appear in the remedial investigation report.</p>	<p>5.</p> <p>a. The topic of FSPs has been discussed in detail among the members of the Risk Assessment Technical Working Group. During review of the EE work plans the necessary FSP details missing from the work plans, such as sampling frequency, were identified. It was agreed upon that without at least a preliminary survey of the study site these details for the FSP could not be written into the work plans. As a solution, it was concluded that future EE work plans would contain the necessary FSP details but that the OU1, OU2, and OU5 work plan FSPs would need to be supplemented with further information following completion of some preliminary field work. The FSP details for OU1 and OU2 are being developed at this time and will be available for EPA to see around the end of September, 1991.</p> <p>b. The types of water and soil QA/QC samples to be collected in conjunction with all water and soil programs are specified in the water and soil sampling SOPs. The ecology FSP SOP only specifies QA/QC samples to be collected in conjunction with biological sampling for EEs. Rinse blanks and trip blanks were the only types of QA/QC samples considered appropriate for biological sampling since it is impossible to have such things as a spiked mouse or a duplicate sample of a mouse. QA/QC for biological sampling is commonly based on replicate sampling.</p> <p>cont. on next page</p>

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5 b. cont.

Response

cont. This is being applied for EEs at RFP. Replicate samples (ex: more than one mouse collected from a given sampling location) will allow for the calculation of sampling variance which converts to a value for sampling adequacy. The level of sampling adequacy reached is a QA/QC measure. The level hoped to be achieved can be set at the start of a program and will vary for the type of sampling being conducted (vegetation, small mammals, etc.). For EEs, measurements of sampling adequacy will serve to caveat the data with a level of certainty similar to other types of QA/QC measures.

QA procedures for checking data analysis calculations have not been established at this time. QA procedures for calculations conducted for EEs will be incorporated into the QAPJP and will include such things as, calculation review by a second person prior to reporting.

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b. cont.:

c. The OU specific work plans state that SOPs are being developed for soil microbes, recording and managing data, preserving and handling samples, conducting laboratory studies, and incorporating QA/QC. The revised SOPs include none of these.

Response

b. cont.: QA/QC methods for verifying lab data will follow the protocol in the QAPJP for data validation. QA/QC for verifying calculations made on biological data will be the involvement of having all calculations recalculated and verified by a different individuals than the individuals conducting the original calculations. This will be documented in the QAPJP since it applies program-wide.

c. Several of these topics are covered in the revised SOPs. It is true that each of these topics does not have its own SOP but that is not appropriate for each of these topics. The following is the status on these topics:

Soil Microbes - Not yet developed. No soil microbe studies being conducted yet at this time.

Recording and Managing Data - EM SOP Vol. I, #1.14 is called Field Data Management and contains information on data tracking, data entry, data verification, etc. These procedures apply to ecology field programs. It specifies that field data will be reported weekly and field data forms will be kept on file etc.. A field sample tracking form specific for tracking biota samples was added to this SOP. Which type of ecological data will be stored in RFEDS has not been finalized yet since much of the data is qualitative information and not a numeric record.

Personnel contacted:

EE&B ROCKY FLATS

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		c. cont.:		<p>Response</p> <p><u>Preserving and Handling Samples</u> - Information on handling and preserving biota samples was originally going to be incorporated into EM SOP Vol. I, #1.13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples since much of the procedures would overlap. However, it was necessary to insert the necessary preservation and handling information for biota samples into the project QAA. This will be finalized soon.</p> <p><u>Conducting Laboratory Studies</u> - As stated in the work plans, one of the EE sampling objectives is to provide site-specific information for determining objectives, measurement endpoints, and methodologies for Task 9, Field/Laboratory contamination studies. If the sampling and analysis phase, Task 3, of the EE provides data to support the need for conducting further laboratory studies such as enzyme inhibition or microbial respiration then appropriate SOPs for these laboratory studies will be developed. What these SOPs may contain will be site-specific and can not be predetermined at this time.</p> <p><u>Incorporating QA/QC</u> - Information on biota QC samples is appropriately contained in the FSP SOP. Other programmatic QA/QC requirements are specified in the QAPJP and the project specific QAAs. Potential additional QA/QC procedures will be discussed with the EPA. However, at this time QA/QC sampling requirements for EEs will remain in the FSP SOP and not be contained in a separate SOP. Any other non-sampling QA/QC procedures deemed necessary will be added to the QAPJP in the future.</p>

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6. Appendix A, Species Code List: The species code list is limited to vertebrate species expected to be encountered at RFP. The reason for limiting the list to vertebrates is not clear because of the plans to study Benthic Macroinvertebrates, periphyton, plankton, and vegetation. All of the data collected during the EES should be on the same database.

Response

6. The species code Appendix A is not meant to serve as the comprehensive site species list. Its purpose is to set the procedures for creating species codes for data recording. At this time invertebrates and arthropods will not be identified at the species level; therefore, coding will not be applicable for recording field data. Plant species codes will be added to the next revision of the ecology SOPs. Other species codes not initially needed but which become necessary in the future will be added to the SOP in the future.

Personnel contacted: _____